



Problems with diagnostics of magnetic field topology from the parameters of accelerated particles

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Magnetic field topology in reconnecting current sheets is shown in the test particle approach to define the individual particle energy gains for both kind of particles: electron and protons, and thus, the shape of their energy spectra at ejection (Zharkova and Agapitov, JPP,2009). However, more recent PIC simulations revealed the appearance of plasma turbulence inside an RCS caused by the polarization electric field induced by the accelerated particles themselves (Siversky and Zharkova, JPP, 2009). In this paper we discuss the consequences of consideration of the plasma feedback onto the accelerated particles and possible scenarios problems in magnetic field diagnostics from high energy emission coming from accelerated particles.